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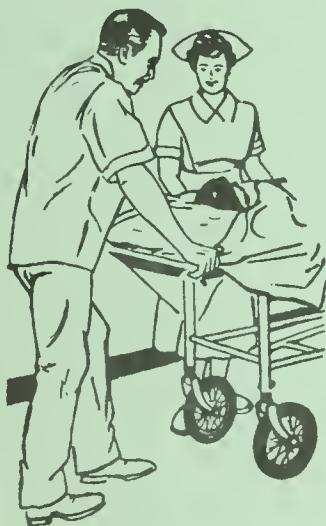
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PROJECTED MONTANA
EMPLOYMENT BY INDUSTRY

AND SELECTED OCCUPATIONS

1970 - 1975



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MONTANA MANPOWER 1975

Projected Montana Employment by
Industry and Selected Occupations

1970-1975

Employment Security Agency
Montana State Employment Service
Jess C. Fletcher, Director

Prepared by: E. S. Research and Analysis
Montana State Employment Service

April 1971

First Edition

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I. Introduction

In recent years, the need for detailed occupational projections has become almost a necessity due to more and expanded vocational and manpower training programs. Manpower planners have, in the past, been forced to plan manpower and vocational education programs with a minimum of reliable data on occupational needs in the future.

This document is an attempt to provide a guide as to what industry and occupational profiles of the labor force will be in 1975. The projections shown herein are only a beginning and will be updated as more information and new sources of data become available.

To arrive at these forecasts of manpower needs in 1975, average annual employment was estimated for the years 1957 through 1969 and projected to 1975. Methodology and economic assumptions used in preparing this report, as well as detailed statistical tables, appear in the appendix.

While the projections for each industry and occupation appear as specific numbers, they should not be considered precise due to limitations of the data and the risks inherent in any type of economic forecasting. However, the figures shown do provide a basic guide as to the relative magnitude and direction of industrial and occupational changes that are expected to occur in the next five years. The user can and should modify these figures on the basis of more detailed or recent information if it is available.

II. Summary and Conclusions

A. Employment by Industry 1960, 1970 and 1975 (In Thousands) ^{1/}

<u>Industry</u>	<u>1960 Avg. Employment</u>	<u>1970 Avg. Employment</u>	<u>Projected 1975 Avg. Employment</u>	<u>% Change 1970-1975</u>
Civilian Work Force	253.9 ^{2/}	282.1 ^{2/}	288.1	
Unemployment	17.0	18.8	11.5	
Unemployment Rate as a % of Civilian Work Force	6.7	6.7	4.0	
Total Employment	236.0	263.2	276.6	5.1 %
Non-Agricultural Wage & Salary	166.8	200.6	213.5	6.3 %
Manufacturing	20.4	23.6	24.9	5.5 %
Durable Goods	12.7	15.2	15.9	4.6 %
Non-Durable Goods	7.7	8.4	9.0	7.1 %
Non-Manufacturing	146.4	177.0	188.6	6.4 %
Mining	7.4	6.7	6.1	- 9.0 %
Contract Construction	11.0	10.9	11.8	6.3 %
Transportation & Public Util.	19.0	17.2	17.3	-----
Wholesale & Retail Trades	40.5	48.2	49.9	3.7 %
Finance, Insurance & Real Estate	6.9	8.1	8.4	3.7 %
Services	23.1	33.5	35.3	5.4 %
Government	38.5	52.4	59.8	14.1 %
All Other Non-Ag. Employment ^{3/}	30.2	29.5	29.5	-----
Agriculture	39.0	33.1	33.6	-----

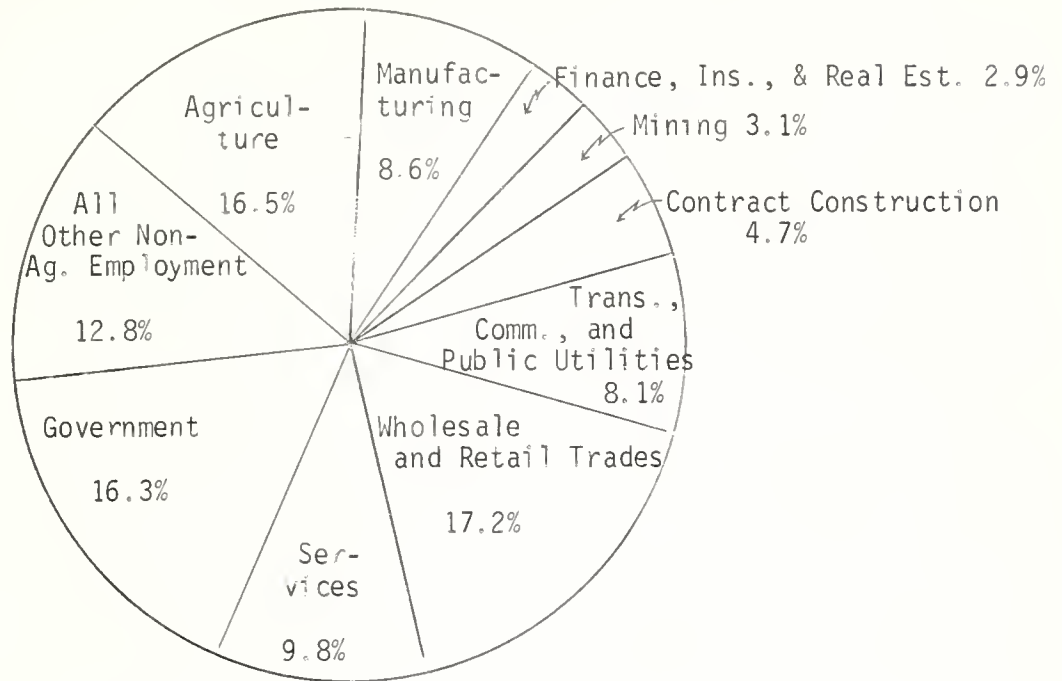
^{1/} Refer to Appendix I, Table I, for detailed employment by industries.

^{2/} Includes persons involved in labor/management disputes.

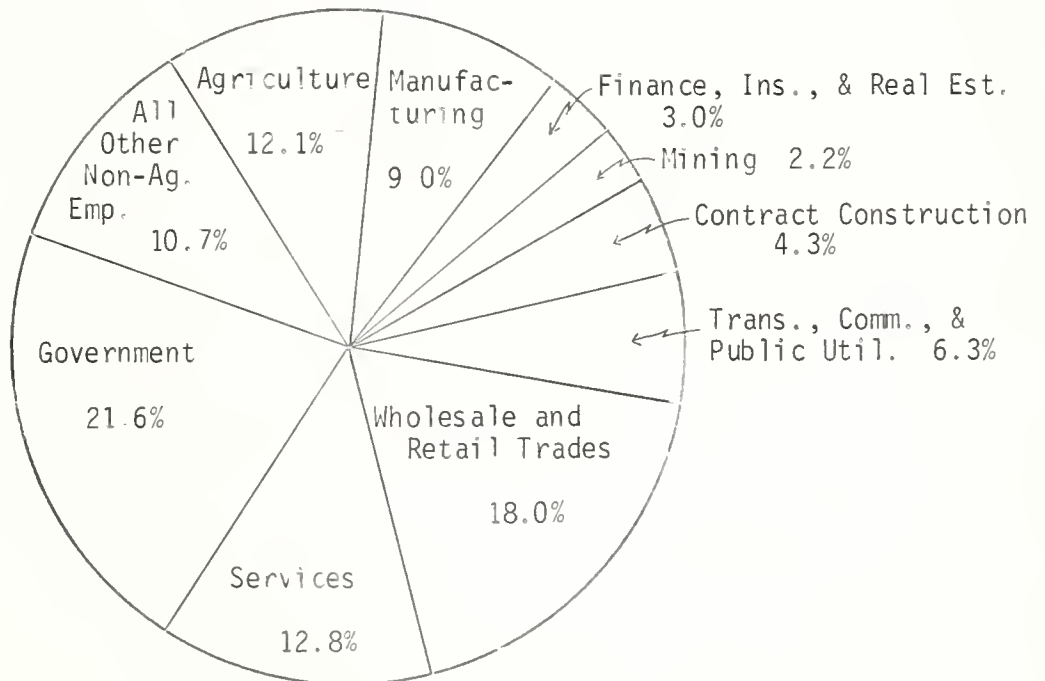
^{3/} Includes Non-Ag., Self-Employed, and unpaid family workers & domestic workers in private households.

CHART #1 - EMPLOYMENT DISTRIBUTION BY INDUSTRY - 1960 & Est. 1975

EMPLOYMENT - 1960



ESTIMATED EMPLOYMENT - 1975



The above diagrams indicate the changing industrial structure of Montana's employed work force from 1960 to 1975.

B. Anticipated Developments by Industry, 1970-1975

1. Total Employment

Total employment in Montana is expected to reach 276,600 persons by 1975, an increase of 13,300, or 5.1%, over 1970. Economic conditions during the last two or three years have slowed the employment gain from the peak growth period during 1965-1967. This condition is expected to continue through 1972 until the national economy recovers from its present recession.

Industrial growth in Montana has continuously lagged behind national growth mostly due to its large land area, sparse population and distance from major marketing centers. In 1960, Montana accounted for .36% of total employment nationwide. By 1970, Montana's ratio to total national employment had dropped to .33%. In short, although total employment in Montana has grown significantly since 1960, the rate of growth has fallen somewhat short of the national rate.

2. Non-Agricultural Wage and Salary Workers

a. Manufacturing

Manufacturing in Montana is, for the most part, confined to lumber, primary metals, and food production, and accounted for 8.9% of total employment in 1970. Manufacturing industries are expected to create 1,300 new jobs in addition to normal replacement needs by 1975.

b. Non-Manufacturing

The bulk of Montana's employment is concentrated in non-manufacturing activities. In 1960, non-manufacturing industries accounted for 62% of all jobs in Montana. By 1970, this ratio had increased to 67% due primarily to the expansion of State and Local Government employment.

(1) Mining - Mining employment is expected to be near 6,100 jobs by 1975, a decline of 600, or 9%, from 1970 levels. This estimate is based on the declining trend which has occurred in mining employment since the opening of the Berkley Pit in Butte in 1955. Recent developments concerning the Anaconda

Company's Chile operations could have a substantial effect on mining employment in Montana. If Anaconda loses its operations in Chile, it could result in expansion of their activities in Montana. In addition, there have been rumors of developing open pit operations near Lincoln, Troy and Nye. If these activities occur, mining employment could expand to near 1960 levels although probably not until the latter part of the forecast period.

All other mining industries; i.e., coal, quarrying, non-metal mining, and oil and gas extraction, have remained relatively static in recent years and this condition is expected to continue through 1975.

(2) Contract Construction - Employment in construction trades is difficult to predict as it depends greatly on Federal spending policies and available money. However, in the last thirteen years, employment has remained relatively stable in terms of annual averages, in spite of extreme seasonal fluctuations due to Montana's weather during the winter. In light of the trends of past years, employment is expected to remain at, or slightly above, present levels through 1975. Most of the increased employment will occur in heavy construction as the result of large federal projects such as the Interstate Highway System and the ABM missile installation.

(3) Transportation, Communications, and Public Utilities - Employment in this industry group declined slightly due to the rapid drop in railroad workers since 1960. Railroad employment is expected to decline continuously through 1975. Other transportation, communications and public utilities are expected to maintain their slow growth trend of recent years, with job opportunities best in communications and public utilities.

(4) Wholesale and Retail Trades - Employment in the trade industries is expected to continue its moderate growth trend of recent years with the majority of new jobs occurring in the Retail Trades, particularly merchandise and apparel stores and eating and drinking places.

(5) Finance, Insurance & Real Estate - The slow steady growth which has occurred in these industries in past years is expected to continue without significant change through 1975.

(6) Services - The service industry in Montana has, along with the national trend, grown significantly since 1960 in response to the increased public demand for services. This demand is expected to continue through 1975.

(7) Government - The growth of government employment, particularly state and local, has been spectacular during the last ten years. The demand for governmental supplied services has resulted in a 14.1% increase in employment and constitutes the largest single employer in Montana. Government agencies employ persons of almost every type of occupation and job opportunities are expected to continue to increase particularly in professional, technical and service occupations. Job opportunities are expected to increase most in state and local governmental agencies.

3. All Other Non-Agricultural Employment

This group includes all non-agricultural self-employed and unpaid family workers, and domestic workers in private households. It has remained almost static in the last ten years and will decline only slightly in the next five years due to fewer domestic workers in private households and unpaid family workers. Self-employed workers are expected to increase along with the rise in the work force.

4. Agriculture

Employment in the agriculture industry has declined steadily both nationally and in Montana for the past thirty years. The reduction has been especially rapid in recent years as a result of mechanization. In addition, the occupational structure has changed from unskilled workers to skilled mechanical occupations. The farm equipment mechanic and operator has emerged to replace the former unskilled farm or ranch worker. The current need for trained

farm equipment mechanics and operators is expected to continue despite reduced employment and a surplus of unskilled farm workers.

C. Employment by Major Occupational Groups and Anticipated Job Opportunities, 1970-1975

1. Professional, Technical and Kindred - Employment in this group is expected to increase nearly 53% over 1960 levels by 1975. Job opportunities during the five year period from 1970 to 1975 will exceed 9,810 openings. The job outlook will be the best in the following categories:

<u>Occupation</u>	<u>Number of Job Openings 1970-1975</u>
Engineers, various	490
Natural Scientists, various	280
Nurses, professional	1,390
Medical Technicians	480
Teachers, various	3,100

Most of the occupations included in this group require education and training beyond the capacity of existing manpower programs. Exceptions are the Health and Medical Technician occupations, which are now, and are expected to continue to be, a rapidly expanding field.

2. Managers, Officials and Proprietors (except farm) - Among this group of occupations, an estimated 4,520 job openings will occur during the forecast period. The majority of these jobs will be in the service industries, with the balance split between the finance, insurance and real estate sector, and the manufacturing and construction industries.

3. Farm Managers and Proprietors - The number of job opportunities in farm occupations is expected to decrease slightly during the forecast period mostly due to consolidation of small family-owned farms and ranches. Demands will primarily be for a limited number of experienced and well qualified farm managers for replacement needs.

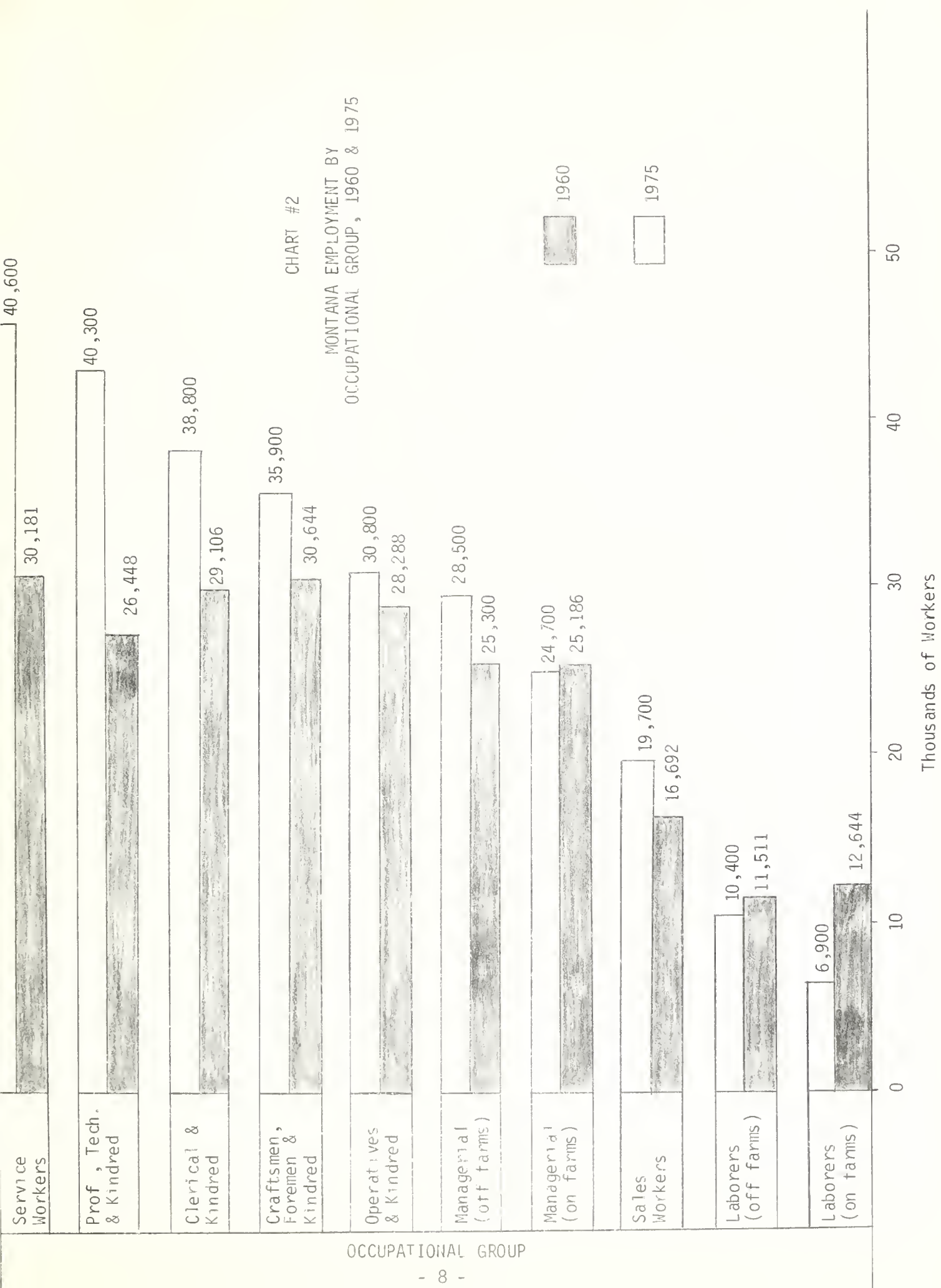
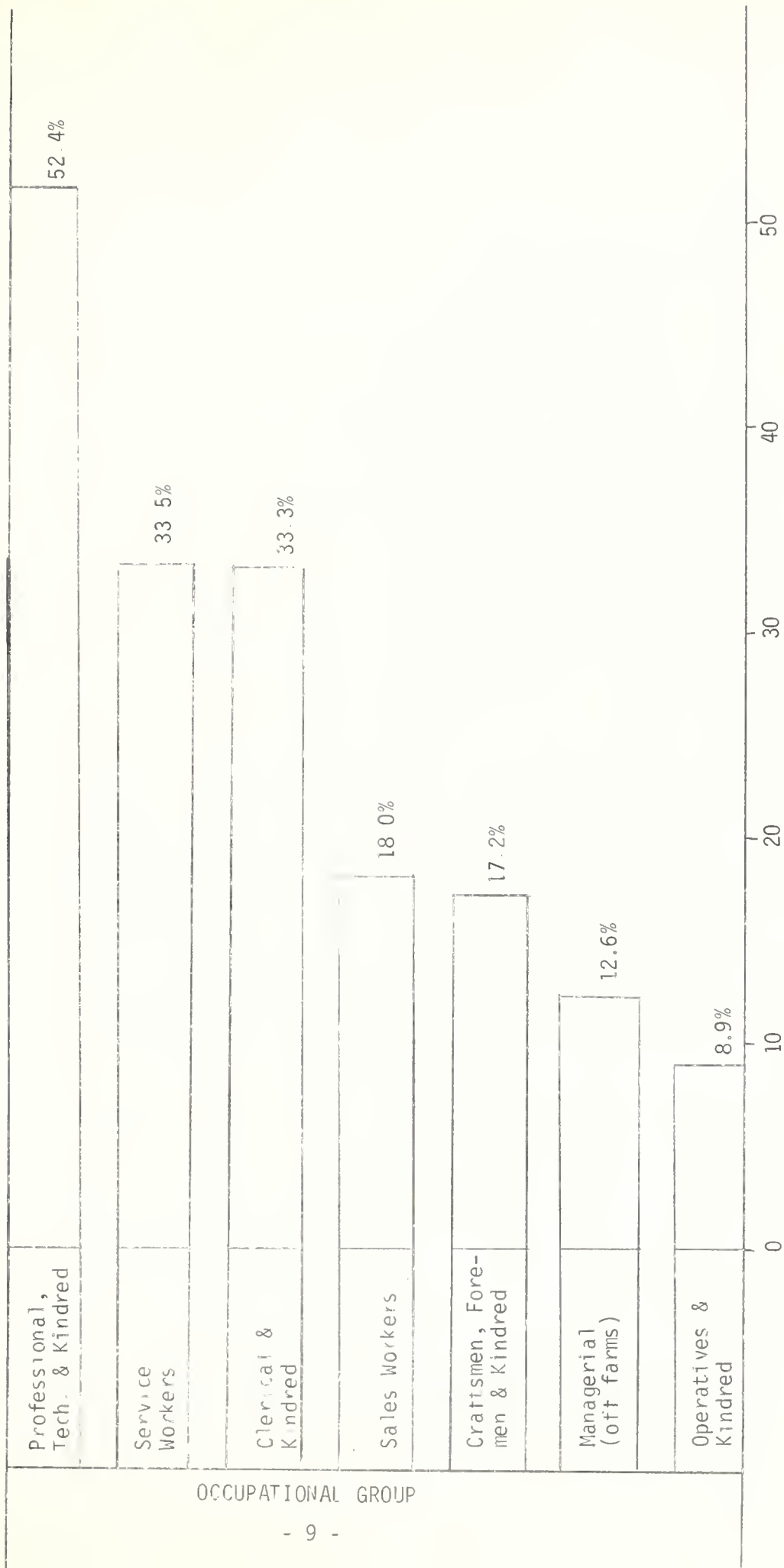


CHART #3

MONTANA INCREASE IN EMPLOYMENT BY OCCUPATIONAL GROUP

1960-1975 ^{4/}



PERCENT INCREASE 1960-1975

^{4/} Managers (on farm), Laborers (on farm) and Laborers (off farm) are not included as these occupational groups show a decline in employment from 1960-1975.

4. Clerical and Kindred Workers - Nearly 10,610 clerical and related workers will be needed during the forecast period. The job outlook will be best in the following occupations:

<u>Occupation</u>	<u>Number of Job Openings 1970-1975</u>
Stenographers & Typists	3,110
Bookkeepers	1,560
Cashiers & Checkers	730

There has been in the past, and is expected to continue to be, a shortage of these occupations statewide, particularly for well-qualified stenographers and typists. Most of these occupations are easily adaptable to training programs.

5. Sales Workers - Nearly 4,120 sales workers will be needed during the forecast period, mostly in the trade industries. However, a large part of these will result from replacement needs rather than industry expansion due to the high turnover rate among these occupations.

6. Craftsmen, Foremen, and Kindred Workers - Despite the relatively slow growth for this occupational classification, nearly 5,230 workers will find jobs in this category during the next five years. Job opportunities for construction craftsmen will employ 1,270 new workers although no specific occupation shows more than nominal growth. The following occupations will provide the best job opportunities during the forecast period:

<u>Occupation</u>	<u>Number of Job Openings 1970-1975</u>
Foremen, various	740
Linemen	220
Mechanic, motor	480
Carpenters	520

Promotions of journeymen craftsmen into the foremen category will result in job openings at the entry level. However, employment usually requires long periods of on-the-job training at the apprentice level before the employee becomes a qualified journeyman.

7. Operatives and Kindred Workers - Total employment of operatives is expected to increase by 3,720 workers during the forecast period and most job opportunities will be the result of replacement needs. Nearly one-third of the total needs will be for drivers and driver-deliverymen.

8. Service Workers - Industry expansion will result in an increase of 3,450 workers during the forecast period. In addition, nearly 9,110 workers will be required for replacement needs. Job opportunities are considered good to excellent in nearly all categories except private household workers. The following are examples of the types of workers that will be needed during the period:

<u>Occupation</u>	<u>Number of Job Openings 1970-1975</u>
Protective (Firemen, Policemen & Guards)	510
Cooks, various	1,440
Waiters & Waitresses	1,550
Attendants, hospitals & institutions (Nurse Aides)	1,690
Janitors	1,310
LPN's	560

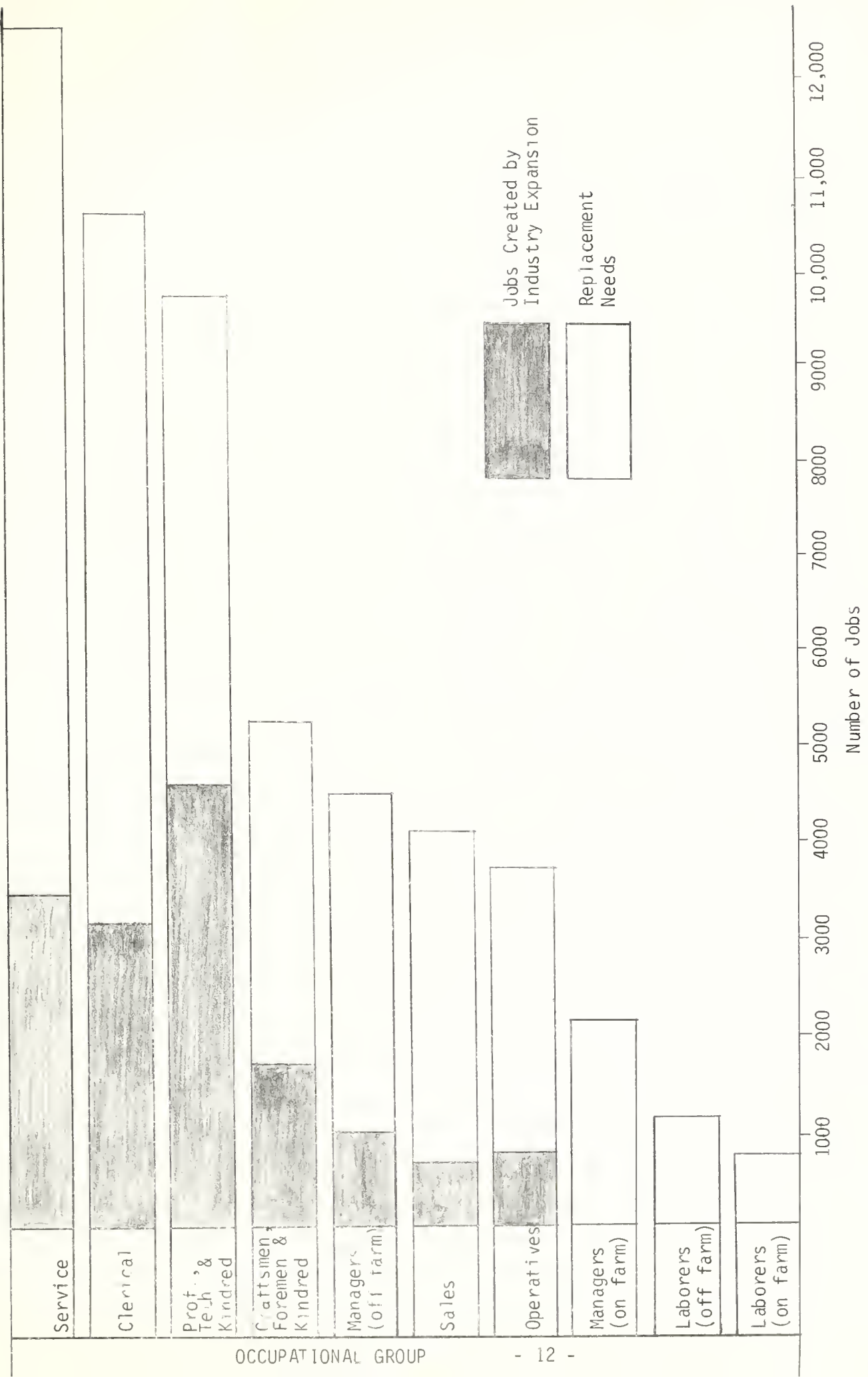
9. Laborers, Off Farm - This category includes all types of unskilled labor except farm, and job opportunities will be restricted to replacement needs during the forecast period. Total jobs will decline nearly 400 by 1975 in keeping with the trend of increased mechanization which requires at least semi-skilled workers for almost every type of job. Many workers in this category will be forced to change occupations or learn new skills as a result of technological advances.

10. Laborers, On Farm - Total employment in farm labor occupations is expected to decline by nearly 22% between 1970 and 1975 as a result of the complete change in farming technology which has been occurring over the past few years. Job opportunities will be limited in most areas and, as a rule, restricted to experienced workers, particularly irrigators, cattle feeders, and general farm hands.

CHART #4

JOB OPPORTUNITIES BY MAJOR OCCUPATIONAL GROUPS

1970-1975



Appendix I, Table V, presents a complete breakdown, by occupation, of total employment in 1960, 1970 and 1975, along with job opportunities during the forecast period of 1970 to 1975 resulting from industry expansion and replacement needs.

Appendix I

STATISTICAL TABLES

Appendix I
STATISTICAL TABLES

Table I

MONTANA STATEWIDE WORK FORCE
1960, 1970, and projected 1975
by Industry

(In Thousands)

	1960 Average Employment	1970 Average Employment	Projected 1975 Avg. Employment
Civilian Work Force	253.9 ^{1/}	282.1 ^{1/}	288.1
Unemployment	17.0	18.8	11.5
Unemployment Rate	6.7	6.7	4.0
Total Employment	236.0	263.2	276.6
Non-Ag. Wage and Salary	166.8	200.6	213.5
Manufacturing	20.4	23.6	24.9
<u>Durable Goods</u>	12.7	15.2	15.9
24 Lumber & Wood Products	7.3	8.1	8.3
33 Primary Metal Industries	3.8	4.6	4.9
Other Durable Goods	1.6	2.5	2.7
<u>Non-Durable Goods</u>	7.7	8.4	9.0
20 Food & Kindred Products	4.3	4.3	4.6
27 Printing & Publishing	1.7	1.8	1.9
29 Petroleum & Coal Products	0.9	1.1	1.2
Other Non-Durable Goods	0.8	1.2	1.3
Non-Manufacturing	146.4	177.0	188.6
<u>Mining</u>	7.4	6.7	6.1
10 Metal Mining	4.5	4.0	3.7
12 & 14 Bit. Coal, Quarrying, Non-Metal Mining	0.7	0.9	0.8
13 Oil & Gas Extraction	2.2	1.8	1.6
<u>Contract Construction</u>	11.0	10.9	11.8
15 General Building Contractors	4.3	2.6	2.8
16 Heavy Construction Contractors	2.8	4.7	5.2
17 Special Trade Contractors	3.9	3.6	3.8
<u>Transportation & Public Utilities</u>	19.0	17.2	17.3
40 Railroad Transportation	9.0	6.6	5.7

^{1/} Includes persons involved in labor/management disputes.

	<u>1960 Average Employment</u>	<u>1970 Average Employment</u>	<u>Projected 1975 Avg. Employment</u>
41-47 Trans., except Railroads	4.0	4.5	4.6
48 & 49 Comm. & Utilities	6.0	6.1	7.0
<u>Wholesale & Retail Trades</u>	40.5	48.2	49.9
Wholesale Trade	8.7	9.7	10.0
Retail Trade	31.8	38.5	39.9
53 & 56 Ret. Gen. Merch., Apparel	5.9	7.0	7.3
54 Food Stores	4.9	5.5	5.7
55 Auto Dealers, Service Stations	6.6	8.0	8.2
58 Eating & Drinking Places	7.8	10.4	10.9
52, 57, 59 Bldg. Mat. & Misc.	6.6	7.6	7.8
<u>Finance, Insurance & Real Estate</u>	6.9	8.1	8.4
<u>Services</u>	23.1	33.5	35.3
70 Hotels & Other Lodging Places	3.0	4.0	4.5
72 Personal Services	2.1	2.4	2.5
Other Services	18.0	27.1	28.3
<u>Government</u>	38.5	52.4	59.8
91 Federal Government	9.9	11.7	13.4
92 & 93 State & Local Government	28.6	40.7	46.4
All Other Non-Ag. Employment ^{2/}	30.2	29.5	29.5
Agriculture	39.0	33.1	33.6

^{2/} Includes Non-Agricultural, Self-Employed, and unpaid family workers, and domestic workers in private households.

Table II

EMPLOYMENT BY INDUSTRY
as a percent of total employment
1960, 1970, & 1975

	% of Total Employment 1960	% of Total Employment 1970	% of Total Employment 1975
Total Employment	100.0 %	100.0 %	100.0 %
Non-Agricultural Wage & Salary	70.7	76.0	77.2
Manufacturing	8.6	8.9	9.0
Durable Goods	5.4	5.8	5.7
Non-Durable Goods	3.3	3.2	3.3
Non-Manufacturing	62.1	67.1	68.2
Mining	3.1	2.5	2.2
Contract Construction	4.7	4.2	4.3
Transportation & Public Utilities	8.1	6.6	6.3
Wholesale & Retail Trades	17.2	18.2	18.0
Finance, Insurance & Real Estate	2.9	3.1	3.0
Services	9.8	12.7	12.8
Government	16.3	19.8	21.6
All Other Non-Agricultural Employment ^{3/}	12.8	11.2	10.7
Agriculture	16.5	12.8	12.1

^{3/} Includes Non-Agricultural, Self-employed, and unpaid family workers and domestic workers in private households.

Table III
PROJECTED EMPLOYMENT 1975
by Industry
with upper and lower limits
(In Thousands)

<u>Industry</u>	<u>Lower Limit</u> ^{5/}	<u>Preliminary 1975 Projection</u> ^{4/}	<u>Upper Limit</u> ^{5/}	<u>Final 1975 Projection</u>
Total Civilian Labor Force	279.4	288.8	298.2	288.1
Unemployed				11.5
Unemployment Rate				4.0 %
Total Employment	272.1	278.5	284.8	276.6
Non-Agricultural Wage & Salary	202.1	209.1	216.1	213.5
Mining	4.4	5.5	6.6	6.1
Contract Construction	10.1	11.5	12.7	11.8
Manufacturing	22.8	24.2	25.6	24.9
Durable Goods	13.4	15.5	17.6	15.9
Non-Durable Goods	4.8	8.4	12.0	9.0
Transportation & Public Utilities	16.0	16.8	17.5	17.3
Railroads	5.3	5.7	6.0	5.7
Other Trans. & Public Utilities	10.7	11.1	11.5	11.6
Wholesale and Retail	47.3	48.5	49.7	49.9
Wholesale	9.1	9.5	9.9	10.0
Retail	38.1	38.9	39.7	39.9
Finance, Insurance & Real Estate	7.8	8.1	8.4	8.4
Services	32.2	34.3	36.4	35.3
Government	53.5	62.9	72.3	59.8
Federal	11.4	13.3	15.3	13.4
State & Local	43.1	44.9	46.7	46.4
All Other Non-Agricultural Employment	29.0	29.5	30.0	29.5
Agriculture	31.2	33.6	36.0	33.6

^{4/} Individual industries will not add to totals. These figures were "forced" to the figures appearing in the Final 1975 Projection column.

^{5/} Individual industries will not add to totals due to differences in correlation coefficients.

Table IV

TOTAL INDUSTRY EMPLOYMENT - 1975
(Distribution of Government & All Other Non-Ag. Employment)

(In Thousands)

<u>Industry</u>	<u>Final 1975 Projection</u>	<u>Self-Emp. & Unpaid Family^{6/}</u>	<u>Gov't.^{6/}</u>	<u>Total Industry Employment^{7/}</u>
Total Civilian Labor Force	288.1			288.1
Unemployed	11.5			11.5
Unemployment Rate	4.0%			4.0%
Total Employment	276.6			276.6
Non-Ag. Wage & Salary	213.5			
Mining	6.1	0.4	----	6.5
Contract Construction	11.8	3.4	4.9	20.1
Manufacturing	24.9	1.8	0.1	26.8
Durable Goods	15.9	1.2	0.07	17.2
Non-Durable Goods	9.0	0.6	0.06	9.6
Transportation & Public Utilities	17.3	1.0	2.3	20.6
Railroads	5.7	----	0.1	5.8
Other Trans. & Public Util.	11.6	1.0	2.2	14.8
Wholesale and Retail	49.9	11.1	0.6	61.6
Wholesale	10.0	1.4	----	11.4
Retail	39.9	9.7	0.6	50.2
Finance, Insurance & Real Estate	8.4	1.7	0.4	10.5
Services	35.3	10.1	26.7	72.1
Public Administration	----	----	22.2	22.2
All Other Non-Ag. Employment	29.5	(29.5)	----	
Agriculture	33.6		2.6	36.2
Government	59.8			
Federal	13.4			
State and Local	46.4			

^{6/} Distribution based on ratios from 1960 Census.

^{7/} Total Industry Employment resulted from distribution of Government, Self-Employed and Unpaid Family Workers so that industry detail would match National industry data. (See Page II-2)

Table V

MONTANA EMPLOYMENT 1960, 1970 & 1975 by OCCUPATION
&
JOB OPPORTUNITIES 1970 THROUGH 1975 by OCCUPATION

OCCUPATION	EMPLOYMENT			JOB OPPORTUNITIES, 1970-1975		
	1960	1970	1975	Industry Expansion	Replac- ment Needs	Total Jobs Avail.
TOTAL	236,000	263,300	276,600	13,300	38,950	52,250
Professional, Tech. & Kindred	26,448	35,700	40,300	4,600	5,210	9,810
Engineers	1,603	2,250	2,570	320	170	490
Chemical	33	40	50	10	*	10
Civil	718	980	1,110	130	100	230
Electrical	339	480	550	70	20	90
Industrial	41	70	80	10	*	10
Mechanical	115	160	180	20	20	40
Metal	9	10	10	0	*	*
Mining	115	140	150	10	10	20
Sales	61	100	120	20	*	20
Other	172	270	320	50	20	70
Natural Scientists	765	1,160	1,360	200	80	280
Chemical	185	310	370	60	30	90
Agricultural	120	210	250	40	20	60
Biological	115	200	250	50	10	60
Geological	304	370	410	40	10	50
Mathematical	8	20	20	0	*	*
Other	33	50	60	10	10	20
Technicians, exc.						
Medical & Dental	1,790	2,650	3,070	420	160	580
Draftsmen	413	540	600	60	30	90
Surveyors	406	580	660	80	40	120
Radio Operators	237	280	300	20	10	30
Other	734	1,250	1,510	260	80	340
Medical, Other Health Workers	5,277	7,090	7,990	900	1,430	2,330
Dentists	351	410	440	30	50	80
Dietitians	63	70	80	10	20	30
Nurses	2,830	3,820	4,290	470	920	1,390
Optometrists	90	80	80	0	10	10
Osteopaths	56	50	50	0	10	10
Pharmacists	364	360	360	0	50	50
Physicians	589	780	880	100	100	200
Psychologists	21	40	40	0	*	*
Technicians	560	1,090	1,360	270	210	480
Veterinarians	108	130	140	10	10	20
Other	245	260	270	10	50	60

* Less than 10

OCCUPATION	EMPLOYMENT			JOB OPPORTUNITIES, 1970-1975		
	1960	1970	1975	Industry Expansion	Replace- ment Needs	Total Jobs Avail.
Teachers	8,839	11,230	12,420	1,190	1,910	3,100
Elementary	5,137	5,680	5,950	270	1,180	1,450
Secondary	2,358	3,440	3,980	540	460	1,000
College	802	1,350	1,620	270	140	410
Other--Excl. Art, Music, Dance	542	760	870	110	130	240
Social Scientists	85	120	140	20	20	40
Economists	52	70	80	10	10	20
Statisticians	25	40	50	10	*	10
Other	8	10	10	0	10	10
Other Professional, Tech. & Kindred	8,089	11,200	12,750	1,550	1,440	2,990
Accountant & Auditor	1,248	1,540	1,690	150	130	280
Airplane Pilots & Navigators	105	150	170	20	10	30
Architects	123	130	140	10	20	30
Workers in Arts	1,519	1,990	2,220	230	330	560
Clergymen	909	930	940	10	120	130
Designers	54	70	80	10	10	20
Editors	331	350	360	10	70	80
Lawyers	793	930	1,000	70	140	210
Librarians	275	370	420	50	100	150
Personnel Workers	267	380	440	60	40	100
Photographers	131	120	120	0	10	10
Social & Welfare Wkrs.	195	290	330	40	60	100
Prof., Tech. & Kindred N.E.C.	2,139	3,950	4,840	890	400	1,290
<u>Managerial - On Farm</u>	25,186	24,900	24,700	0	2,170	2,170
<u>Managerial - Off Farm</u>	25,300	27,470	28,500	1,030	3,490	4,520
Railroad Conductors	470	470	470	0	90	90
Credit Managers	171	250	280	30	20	50
Office Managers	9	10	10	0	*	*
Post Masters	438	390	360	0	20	20
Purchasing Managers	120	150	160	10	10	20
Miscellaneous	24,092	26,200	27,220	1,020	3,350	4,370
<u>Clerical & Kindred</u>	29,106	35,610	38,800	3,190	7,420	10,610
Stenographers	6,380	8,330	9,290	960	2,150	3,110
Office Workers	643	920	1,060	140	220	360
Other Clerical & Kindred Workers	22,083	26,360	28,450	2,090	5,050	7,140
Accountants	158	170	170	0	*	*
Bookkeepers	4,877	5,510	5,820	310	1,250	1,560

* Less than 10

OCCUPATION	EMPLOYMENT			JOB OPPORTUNITIES, 1970-1975		
	1960	1970	1975	Industry Expansion	Replace- ment Needs	Total Jobs Avail.
Bankers	442	710	840	130	160	290
Cashiers, Checkers	1,251	1,930	2,260	330	400	730
Mail Carriers	802	940	1,000	60	80	140
Postal Clerks	745	880	950	70	110	180
Shipping Clerks	271	260	250	0	20	20
Telephone Operators	1,461	1,600	1,670	70	410	480
Miscellaneous	12,076	14,360	15,490	1,130	2,620	3,750
<u>Sales Workers</u>	16,692	18,710	19,700	990	3,130	4,120
<u>Craftsmen, Foremen & Kindred</u>	30,644	34,180	35,900	1,720	3,510	5,230
Construction Craftsmen	9,537	9,920	10,090	170	1,100	1,270
Carpenters	3,991	3,870	3,800	0	520	520
Bricklayers	383	400	410	10	40	50
Cement Finishers	126	150	160	10	10	20
Electricians	1,124	1,200	1,240	40	110	150
Excavators	1,647	1,870	1,980	110	140	250
Painters	1,008	980	960	0	140	140
Plasterers	104	110	110	0	10	10
Plumbers	951	1,090	1,150	60	110	170
Roofers	93	110	120	10	10	20
Structural Metal Workers	110	140	160	20	10	30
Foremen	3,726	4,380	4,700	320	420	740
Metal Working Crafts, exc. Mechanical	1,808	1,790	1,780	0	180	180
Machinist	945	900	870	0	90	90
Blacksmith	129	100	80	0	20	20
Boilermakers	174	150	140	0	20	20
Millwrights	189	210	220	10	20	20
Molders	29	20	20	0	*	*
Pattern Makers	4	0	0	0	*	*
Sheet Metal Workers	326	390	420	30	30	60
Tool & Die Workers	12	20	30	10	*	10
Printing Trades						
Craftsmen	739	700	680	0	70	70
Compositors & Type- setters	554	480	440	0	50	50
Electrotypers & Stereotypers	43	50	50	0	*	*
Engravers	13	20	20	0	*	*
Photographers	35	50	60	10	10	20
Pressmen	94	100	110	10	10	20

* Less than 10

OCCUPATION	EMPLOYMENT			JOB OPPORTUNITIES, 1970-1975		
	1960	1970	1975	Industry Expansion	Replacement Needs	Total Jobs Avail.
Transportation & Public Utilities						
Craftsmen	2,451	2,590	2,650	60	260	320
Linemen	1,378	1,670	1,810	140	80	220
Locomotive Engineers	678	730	750	20	170	190
Locomotive Firemen	395	190	90	0	10	10
Mechanics & Repairmen	7,874	9,850	10,830	980	930	1,910
Airplane Mechanics	130	160	170	10	10	20
Motor	3,089	3,560	3,790	230	250	480
Office Machine	68	100	110	10	*	10
Radio & TV	341	390	420	30	20	50
Railroad & Car Shop	445	440	440	0	60	60
Other	3,801	5,200	5,900	700	590	1,290
Other Craftsmen & Kindred	4,509	4,950	5,170	220	550	770
Bakers	381	350	330	0	50	50
Cabinet Makers	194	170	160	0	20	20
Crane Operators	369	410	440	30	40	70
Glaziers	72	100	110	10	10	20
Jewelers	124	100	80	0	10	10
Opticians	78	80	80	0	10	10
Inspectors, graders & scalers	311	340	350	10	40	50
Inspectors, N.E.C.	465	550	600	50	80	130
Upholsterers	138	150	160	10	20	30
All Other	2,377	2,700	2,860	160	270	430
<u>Operatives & Kindred</u>	28,288	29,970	30,800	830	2,890	3,720
Drivers & Deliverymen	7,872	8,810	9,270	460	680	1,140
Drivers	6,270	6,940	7,270	330	510	840
Deliverymen	1,602	1,870	2,000	130	170	300
Transportation & Public Utilities	1,178	1,110	1,080	0	110	110
Brakemen	999	920	880	0	90	90
Power Station Oper	179	190	200	10	20	30
Semiskilled Metalwrks	1,564	1,670	1,710	40	130	170
Furnacemen, Smel- termen	618	560	520	0	50	50
Welders	739	890	960	70	60	130
Assemblers	110	120	130	10	10	20
Inspectors	97	100	100	0	10	10
Semiskilled Textile Workers	49	50	50	0	10	10
Weavers	11	10	10	0	*	*
Sewers	38	40	40	0	*	*

* Less than 10

<u>OCCUPATION</u>	<u>EMPLOYMENT</u>			<u>JOB OPPORTUNITIES, 1970-1975</u>		
	<u>1960</u>	<u>1970</u>	<u>1975</u>	<u>Industry Expansion</u>	<u>Replace- ment Needs</u>	<u>Total Jobs Avail.</u>
Other Operatives & Kindred	17,625	18,330	18,690	360	1,960	2,320
Asbestos Wrks.	75	90	90	0	10	10
Attendants	1,635	1,940	2,090	150	120	270
Blasters	16	30	30	0	*	*
Laundry Wrks.	1,324	1,380	1,410	30	310	340
Meat Cutters	704	760	790	30	90	120
Mine Operators	3,376	2,650	2,290	0	210	210
Other	10,495	11,480	11,990	510	1,220	1,730
<u>Service Workers</u>	30,181	37,150	40,600	3,450	9,110	12,560
Private Household	5,530	5,760	5,860	100	1,830	1,930
Protective	1,985	2,420	2,640	220	290	510
Firemen	340	430	480	50	30	80
Guards	618	630	630	0	150	150
Police	1,027	1,360	1,530	170	110	280
Food Service Wrks.	9,778	11,880	12,920	1,040	2,670	3,710
Bartenders	2,116	2,400	2,540	140	360	500
Cooks	3,459	4,340	4,770	430	1,010	1,440
Counter & Foun- tain Workers	363	530	620	90	130	220
Waiters	3,840	4,610	4,990	380	1,170	1,550
Other Service Wrks.	12,888	17,090	19,180	2,090	4,320	6,410
Attendants & Nurse Aides	2,482	4,190	5,040	850	840	1,690
Charwomen	661	910	1,030	120	260	380
Janitors	3,259	3,960	4,310	350	960	1,310
LPN's	775	1,140	1,320	180	380	560
Other	5,711	6,890	7,480	590	1,880	2,470
<u>Laborers, Off Farms</u>	11,511	10,780	10,400	0	1,180	1,180
<u>Laborers, On Farms</u>	12,644	8,830	6,900	0	840	840

* Less than 10

Table VI

INDUSTRY GROUP OF THE EMPLOYED, BY OCCUPATION: 1960 & 1975

Occupation	Totals		Agriculture		Mining		Construction		Manufacturing	
	1960	1975	1960	1975	1960	1975	1960	1975	1960	1975
Total Employment:	236,000	276,600	40,700	36,200	7,800	6,500	17,600	20,100	22,300	26,800
Prof., Tech. & Kindred	26,448	40,300	901	1,840	665	750	1,113	1,650	1,131	1,940
Managerial - On Farms	25,186	24,700	25,186	24,700	-----	-----	-----	-----	-----	-----
Managerial - Off Farms	25,300	28,500	117	190	367	320	1,896	2,020	1,678	2,020
Clerical & Kindred	29,106	38,800	485	470	456	450	742	1,290	1,762	2,290
Sales Workers	16,692	19,700	24	30	21	20	20	30	1,548	2,290
Craftsmen, Foremen & Kindred	30,644	35,900	267	670	1,661	1,420	9,156	9,680	4,989	6,610
Operatives & Kindred	28,288	30,800	696	940	4,427	3,250	1,999	3,060	7,561	8,770
Service Workers	30,181	40,600	380	460	203	290	103	120	384	650
Laborers - Off Farms	11,511	10,400	-----	-----	-----	-----	2,571	2,250	3,247	2,230
Laborers - On Farms	12,644	6,900	12,644	6,900	-----	-----	-----	-----	-----	-----

Table VI (Continued)

INDUSTRY GROUP OF THE EMPLOYED, BY OCCUPATION: 1960 & 1975

Occupation	Trans. & Public Util		Wholesale & Retail		Fin., Ins. & Real Est.		Services		Public Admin.	
	1960	1975	1960	1975	1960	1975	1960	1975	1960	1975
Total Employment	21,500	20,600	52,300	61,600	9,000	10,500	50,600	72,100	14,200	22,200
Prof., Tech. & Kindred	801	950	876	1,160	174	250	18,476	27,170	2,311	4,590
Managerial - On Farms	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Managerial - Off Farms	2,070	1,890	11,706	11,450	2,136	3,100	2,990	3,890	2,340	3,620
Clerical & Kindred	4,739	4,290	5,882	8,290	3,812	4,190	5,344	9,240	5,884	8,290
Sales Wrks.	169	270	12,349	14,150	2,158	2,330	365	530	38	50
Craftsmen, Foremen & Kindred	5,735	5,540	4,259	5,900	103	120	3,550	4,580	924	1,380
Operatives & Kindred	5,344	5,280	5,408	6,040	23	30	2,484	2,980	346	450
Service Wrks.	424	570	9,776	12,370	397	280	16,500	22,420	2,014	3,440
Laborers - Off Farms	2,218	1,810	2,044	2,240	197	200	891	1,290	343	380
Laborers - On Farms	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Appendix II

METHODOLOGY

1975 Employment by Industry

Projections of employment in 1975 for the State of Montana began with an intensive study and analysis of employment levels in the past. Detailed historical series by industry were available from 1957 to 1969, which is close to the minimum period upon which any kind of valid assumptions can be made.

The basic method employed to project 1975 employment levels was a technique known as the simple least squares regression. It was felt that this method would result in the best reliability without being extremely complicated and consequently expensive to produce. The major disadvantage of this method is that the use of only one variable to explain changes in local industry employment may not result in a truly accurate picture of future employment. As a result, indicated employment in each industry was tempered with factual opinions about the industry insofar as possible. The end product is, within the limitations of the data, a reasonably reliable picture of the relative magnitude of Montana's employment by industry and occupation in 1975.

Experiments with several variables as related to employment resulted in the use of a relationship of state employment to the logarithm of national employment. This produced the least amount of unexplained variation within the series.

A least squares regression was computed for each major industry by two digit SIC codes with the exception of the All Other Non-Ag. category and Contract Construction which required a different technique when it became evident that local industry changes were not comparable to national changes.

A projection of 1975 employment by industry was obtained by injecting the logarithm of 1975 projected national employment figures from "Tomorrow's Manpower Needs", Supplement No. 2, into the regression formula.

The next step was to compute the regression coefficient for each industry and determine the percent of explained variation. Explained variation ranged from 98.9% for State and Local Government to 56.6% for Federal employment. The majority occurred in the 90's, one in the 80's, and four in the 70's. Computed value of "t" for all industries exceeded the theoretical "t" value at 1% probability and 11 degrees of freedom. However, because the explained variation percentage was low for Federal Government and Manufacturing of Durable Goods, and, in both cases, total government and total manufacturing produced reliable results, the two sub-industries were computed as a residual.

After adjustment for auto-correlation, Non-Agricultural Wage and Salary employment was determined to be an estimated 213,500 persons by 1975. (Refer to Table I.)

Contract Construction and All Other Non-Agricultural Employment had to be treated atypically due to a lack of a significant relationship to any one variable. However, in both cases, variation of annual average employment from mean employment for the thirteen year period was never more than 600 people. The standard error of the mean for Contract Construction was calculated to be 1.58% at one standard deviation with a coefficient of variation of 5.94%. On this basis, the mean value was used as an estimate of 1975 employment. Total employment in All Other Non-Agricultural Industries remained nearly static during the thirteen year period and the 1970 figure was considered a reliable estimate of 1975 levels.

1975 Employment by Occupation

Industry employment for 1975 was first adjusted by distribution of the All Other Non-Agricultural Employment and Government categories to match the Bureau of Labor Statistics national occupational matrix (Table IV). Because the national staffing pattern differed considerably from the Montana 1960 Census staffing pattern, only the rate of change for each occupation was used to determine 1975 occupational

employment levels. In all cases 1975 occupational employment levels were cross-checked with current known conditions and adjusted as necessary.

1970-1975 Replacement Needs

Replacement needs were computed on the basis of the method outlined by "Tomorrow's Manpower Needs", Volume I, Bulletin No. 1606

Emerging Occupations & Preciseness of the Data

As a footnote to the above methodology statement, some mention of two factors which usually concern users of forecast data is in order. These two questions concern "emerging occupations" and the preciseness of the data.

Emerging Occupations - Past experience with analysis of the labor market, both nationally and in Montana, has shown that the job structure changes rather slowly and the overwhelming number of job opportunities which will occur during the normal forecast period are in already existing occupations. In most cases by the time a substantial number of opportunities exist in these "emerging occupations", the occupation itself has become an identifiable part of the job market.

Preciseness of the Data - A technique which produces precise, or reasonably precise, long-range forecasts is, of course, desirable. However, in most cases attempting to obtain absolute figures results in diminishing returns in terms of cost and time involved. Extensive and involved surveys of current and future conditions are, at best, time consuming, costly, and result in data which may or may not be reliable. Because of the cost involved, planners are "locked in" to the same data for several years.

With this in mind, it was felt that the most important factors in which both counselors and manpower planners are concerned are more the relative magnitude and direction of employment and occupational changes rather than absolute numbers. Consequently, the method used herein was chosen as it produced these two criteria and is easily updated at frequent intervals as economic conditions change.

Appendix III

ECONOMIC ASSUMPTIONS

The employment projections contained in this document are based on the assumption that Montana's economy will continue to parallel national economic trends as has been the case during the last thirteen years. Montana's rate of growth, however, has fallen somewhat behind the national rate and we foresee nothing in the next few years which will reverse this trend.

The nation is expected to recover from the present "depressed economic condition" by the end of fiscal year 1972 although Montana's economy will probably react slower due to the lack of industrialization.

There is a certain degree of inherent risk involved in any type of economic forecasting. However, it is necessary to make some basic economic assumptions in order to prepare forecasts of future employment.

Basically, we expect Montana's economy to continue the trends of the past few years with little or no change. The service and trade industries along with government will continue to experience comparatively rapid growth with actual declines occurring in agriculture and the mining industry. All other industries will experience slow to moderate growth in keeping with normal business expansion.

Nationally, the target year of 1975 is assumed to be one of peace-time conditions, similar to those prior to the Vietnam buildup. In addition, during the forecast period it is assumed that:

1. No war or other catastrophic event will seriously alter the current rate of economic growth.
2. Scientific and technological advances will continue at about the same rate as in recent years.
3. Current economic conditions, as well as patterns of consumption, will continue to change at about the same rate as in the recent past.

